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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DOUGLAS B. QUINE

Appeal 2009-004866
Application 10/650,511
Technology Center 2600

Decided: April 26, 2010

Before JOHN C. MARTIN, MARC S. HOFF, and KARL D. EASTHOM, *Administrative Patent Judges*.

MARTIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 5, 10, 11, and 16, which are all of the pending claims.

We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

A. Appellant's invention

Appellant's invention relates generally to video imaging and, more particularly, to capturing images of a mailpiece or other mail-related item in a mailing machine. Specification [0001].[1] The object of the invention is to reduce or eliminate the blurriness due to the motion of the mail-related item so as to allow an operator to have a good view of the item in relation to the mailing machine (*id.* at [0003]).

Figure 1 is reproduced below.

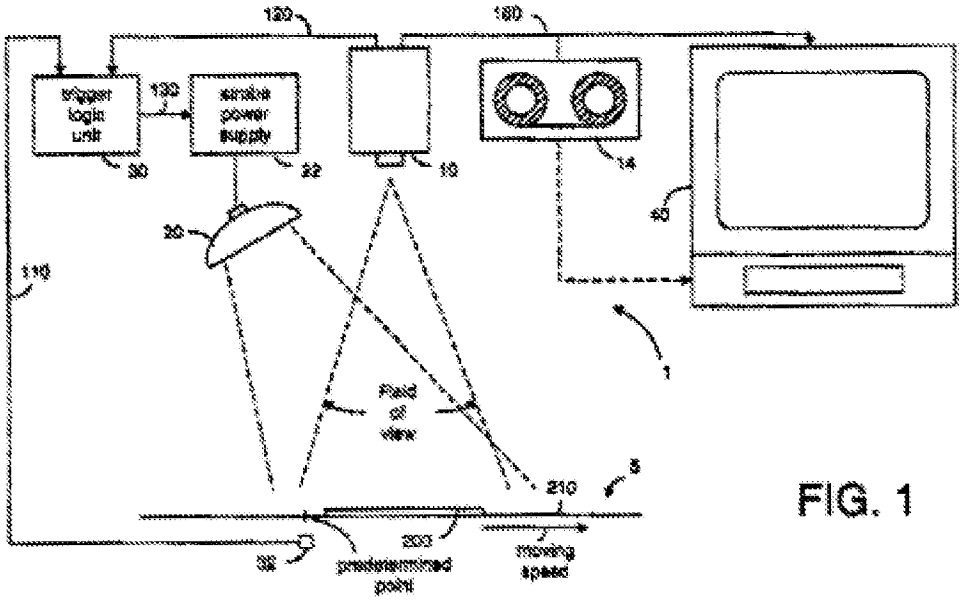


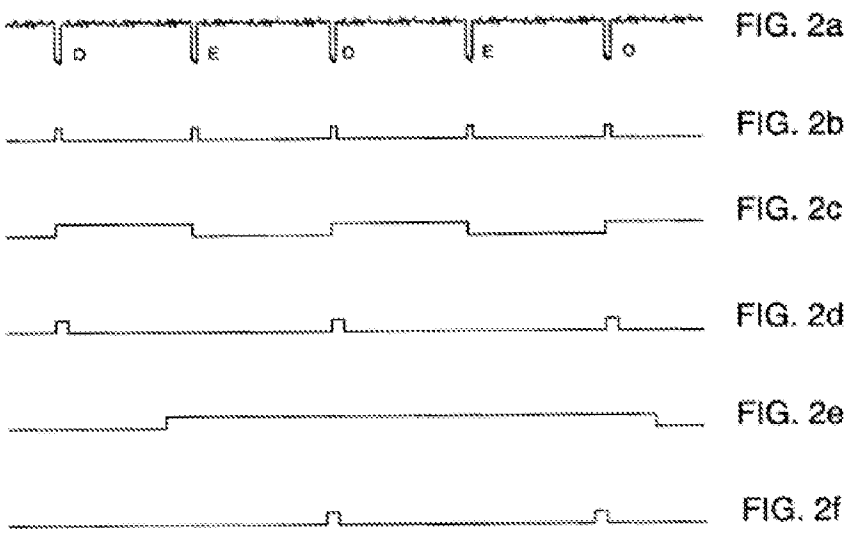
FIG. 1

Figure 1 shows the components of an imaging system 1 according to Appellant's invention (*id.* at [0014]).

[1] Because the Application filed does not have line or paragraph numbers, references herein to Appellant's Specification are to corresponding Patent Application Publication 2005/0046694 A1.

As shown, a mail-related item 200, such as an envelope, is transported along a path 210 in a machine 5 at a certain speed through the field of view of an imaging device 10 (*id.*). A light source 20, such as a strobe light, is energized by a power supply 22 triggered by a trigger signal 130 generated by a trigger logic unit 30 (*id.*), which is responsive to two different input signals. The first input signal (110) is generated by a sensor 32 when the envelope 200 has reached a predetermined point 230 in the path 210 (*id.*). The second input signal 120 is a sync signal generated by imaging device 10 (*id.*).

Figures 2a-2e are reproduced below.



Figures 2a-2e are time plots of the signals in the imaging system of Figure 1 (*id.* at [0007]-[0013]). Each frame of video consists of two interlaced fields (odd and even) each having a vertical ("V") sync pulse (*id.* at [0018]). In trigger logic unit 30, these odd- and even-field V-sync pulses

(shown in Figure 2a) are shaped (*see* Figure 2b) and then converted by a divide-by-two circuit to produce one V-sync pulse per frame (Figure 2d) (*id.*). Figure 2e[2] shows a step-like signal generated by trigger logic unit 30 in response to the output signal of sensor 32 (*id.*). This step-like signal, which indicates when envelope 200 is in the field of view of the imaging device, is provided to an AND-gate along with the fame V-sync signals (Fig. 2d) to produce a strobe lamp trigger signals 130 (*id.*).

With a flash duration of 20 microseconds, an envelope moving at a speed of 30 inches (762 mm) per second will move only approximately 0.6 mils (0.015 mm) during the flash illumination (*id.* at [0019]). Thus, the envelope is effectively stationary and no significant blur is observable when its images are displayed on a video display device 40 (*id.*). In a standard video imaging system in which an image frame having two interlaced image fields is produced 30 times a second, the invention illuminates the entire image at 30 Hz, resulting in 30 "frozen moments" per second (*id.* at [0021]).

B. The claims

The independent claims before us are claims 5, 11, and 16. Claim 5 reads as follows:

> 5. A method of acquiring an image of a moving item in a path in a mailing machine using an imaging device and an illumination source positioned relative to the path, wherein the

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[2] Figures 2e and 2f are incorrectly identified as "FIG. 3*e*" and "FIG. 3*f*" in paragraph 0018.

image includes a discernible feature of the moving item, the imaging device having a field-of-view covering at least a portion of the path, the illumination source capable of providing a flash of light for illuminating at least a part of the field-of-view of the imaging device, wherein the imaging device is capable of acquiring the image in at least one image frame at a time and providing at least one electronic signal indicative of a sync pulse in synchronization with said image acquiring, said method comprising the steps of:

providing a triggering signal based on said at least one electronic signal;

in response to the triggering signal, causing the illuminating source to provide the flash of light for illuminating the moving item at least partially entering the field-of-view;

acquiring the image of the moving item while it is illuminated by the flash of light, wherein the flash of light has a flash duration sufficiently short as compared to the motion of the moving item so as to produce said discernible feature of the moving item in said image;

wherein the imaging device comprises a video camera providing two vertical synchronization signals for each image frame, and the sync pulse is selected from one of said two vertical synchronization signals; and

providing a sensing signal when the moving item having [sic] reached a predetermined point in the field-of-view of the image device, wherein the triggering signal is provided also based on the sensing signal.

Claims App. (Br. 10).

C. The references

The Examiner relies on the following references:

Fischer et al. ("Fischer")	US 3,674,924	July 4, 1972
Dewey et al. ("Dewey")	US 3,674,926	July 4, 1972

D. The rejections

Claims 5, 10, 11, and 16 stand rejected under 35 U.S.C. § 103(a) for obviousness over Fischer in view of Dewey.

THE ISSUE

The principal issue raised by Appellant's arguments[3] is whether the Examiner erred in concluding that the claims are broad enough to permit the claim phrase "electronic signal indicative of a sync pulse" to read on a trailing-edge detector signal that has been delayed by an amount of time equal to the time interval between vertical sync pulses.

ANALYSIS

Fischer's invention, like Appellant's, is an apparatus for electronically arresting the motion of moving documents and displaying them without halting the travel of the documents. Fischer, col. 1, ll. 4-7.

Fischer's Figure 1 is reproduced in relevant part below.

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[3] *See Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) ("If an appellant fails to present arguments on a particular issue — or, more broadly, on a particular rejection — the Board will not, as a general matter, unilaterally review those uncontested aspects of the rejection."). The precedential status of this opinion is noted at the following Board website: http://www.uspto.gov/ip/boards/bpai/decisions/prec/index.jsp.

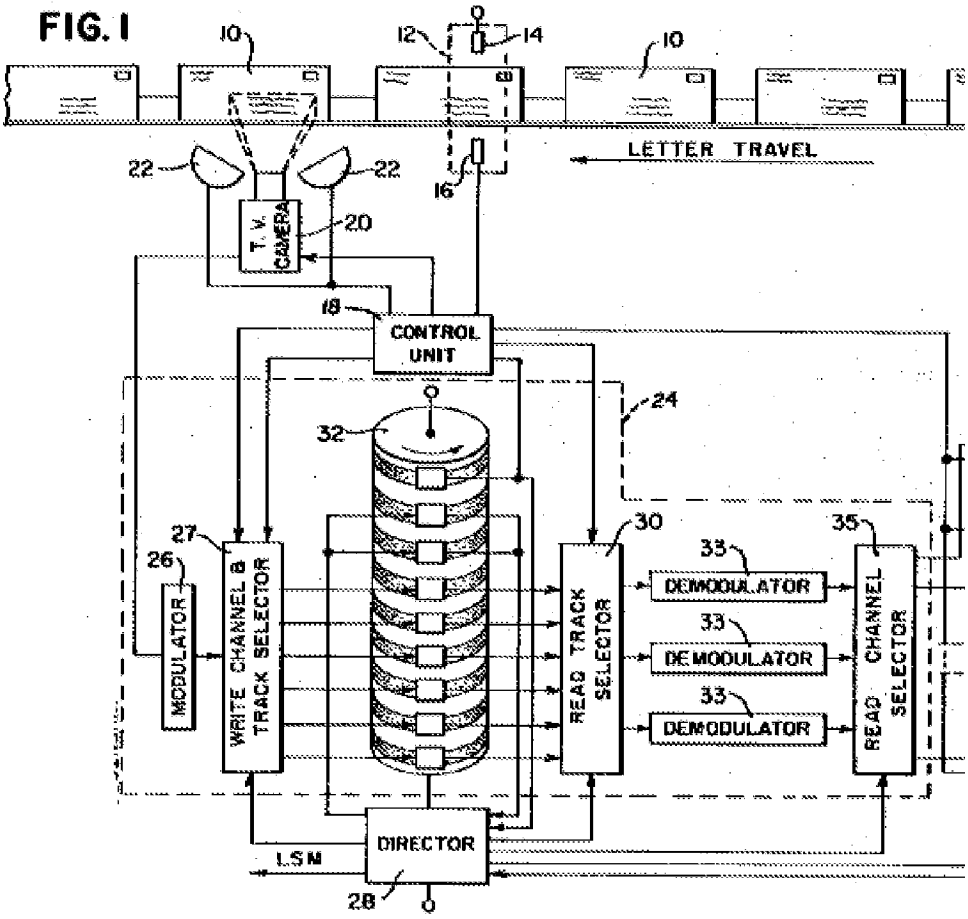

Figure 1 schematically illustrates Fischer's document scanning and display system (col. 2, ll. 45-46). A TV camera 20 and flash lamps 22 are shown connected to a control unit 18 that is also connected to an edge detector 12. The output signal of camera 20 is applied to a video recorder system 24 (col. 3, ll. 65-67)

Figure 2 is reproduced below.

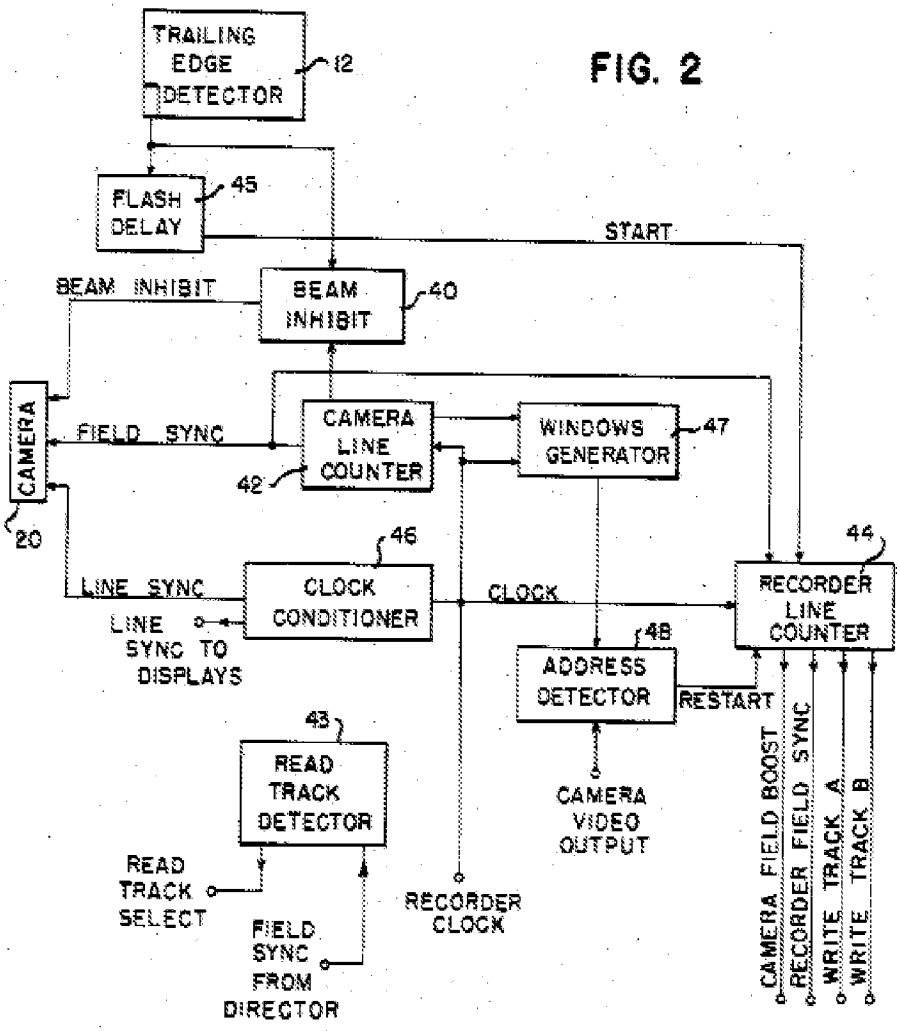

FIG. 2

Figure 2 is a block diagram showing the details of control unit 18 (col. 4, ll. 31-32). A recorder clock signal is permanently recorded on the disc storage medium 32 (Fig. 1; col. 4, ll. 61-62), which rotates at a speed of sixty revolutions per second to provide a recorder clock signal frequency of 32,190 Hz (col. 4, ll. 67-69). The recorder clock frequency is halved by a clock conditioner 46 to provide line synchronization pulses to the camera 20 and the display monitors (col. 4, ll. 70-73). As shown in Figure 2, a field

sync signal for use by camera 20 and recorder line counter 44 is derived from the recorder clock by a camera line counter 42 (not described in Fischer). As also shown in this figure, inhibit circuit 40 is responsive to the output signal of trailing edge detector 12 and to an output signal of camera line counter 42. As explained below, this output signal of camera line counter 42 is (or represents) a field synchronization signal.

Fischer's system operates in relevant part as follows. First, the trailing edge detector 12 transmits a control signal to beam inhibit circuit 40 in order to inhibit the camera electron scanning beam by conventionally increasing the vidicon tube beam control grid voltage to a predetermined value (col. 4, ll. 33-37). The beam inhibit 40 inhibits the beam "upon completion of the first camera field scanned following the trailing edge detector 12 signal, because the letter transport system and the television camera 20 electronics are not synchronized" (col. 4, ll. 37-41).[4]

The output signal of trailing edge detector 12 is also applied to a flash delay 45, which delays triggering of flash lamps 22 "one camera field scanning time after the trailing edge detector has been initiated" in order to ensure that the flash occurs (and the image is stored on the light-sensitive camera screen) while the scanning beam is turned off (col. 4, ll. 42-46). This flash delay function, on which the Examiner relies, is also described as follows in column 2, lines 56-60: "The control unit 18 transmits an

[4] In the quotations herein from Fischer, bolding of the reference numerals is omitted.

energizing pulse to the flash lamps 22 at a predetermined interval of time measured from the time that the trailing edge detector 12 has detected the trailing edge of a letter 10." Next, the scanning beam is turned on in order to read out the captured image from the television camera's screen at the beginning of the first complete field following the triggering of the flash lamps 22 (col. 4, ll. 46-49.). Readout of the first field is immediately followed by readout of the next (i.e., second) field (col. 4, ll. 49-55).

The Examiner, after finding that Fischer's field sync pulses are generated externally in response to the recorder clock rather than being generated by the camera (Final Action 3), as required by the claims, concluded that "at the time of the invention it was common and notoriously well known in the art . . . to include a sync pulse generator within a video camera as is evidenced by Dewey" (*id.* at 3-4). Appellant does not challenge the Examiner's conclusion that it would have been obvious in view of Dewey to include a sync pulse generator within Fischer's video.[5] Thus, in Fischer as modified in the above manner, camera 20 and beam inhibit circuit 40 will be responsive to the line and field synchronization signals that are generated by the camera.

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[5] Appellant's observation that "Dewey makes no mention of a strobe light, or the use of a synchronization signal from the camera to trigger a strobe flash" (Br. 8), while correct, is not responsive the rationale of the rejection. As explained at page 8 of the Answer, it is Fischer rather than Dewey that is being relied on as disclosing a flash triggering signal based on an electronic signal that is indicative of a sync pulse.

The Examiner reads the step of "providing a triggering signal based on said at least one electronic signal" on Fischer's flash delay 45, which as noted above delays triggering of flash lamps 22 by one camera field scanning time after detection of the trailing edge of an envelope. *See, e.g.*, Final Action 2 (reading "providing a triggering signal based on the electronic signal" on "Fischer Figs[.] 1-2 and col. 4 lines 42-45[;] note flash is delayed by one field scan time"). In the Answer, the Examiner, in reading the recited "electronic signal" on this field-delayed detector signal, more specifically explains that "[a]t the beginning of a new field [in Fischer] both a field scan and line scan signal occur simultaneously" (Answer 6) and that "the field delayed electronic signal is a signal that is *indicative of* a sync pulse in synchronization with the camera because the delay represents the period between the simultaneous horizontal and vertical field scan signals in the camera." (*Id.* at 8) (emphasis added).[6] That is, the Examiner has found that field-delayed detector signal is "indicative" of a vertical sync pulse because it represents the time interval between successive vertical sync pulses. As support for reading the recited "electronic signal" on the field-delayed detector signal in this manner, the Examiner explains that

> the claims do not state that a synchronization signal is used as a strobe trigger as the appellant argues. The claims only require that

[6] Because the Examiner reads the recited "electronic signal" on the field-delayed detector signal, we assume the Examiner is reading the recited "triggering signal [that is] based on said at least one electronic signal" either on the field-delayed detector signal itself or on another signal generated in response to the field-delayed detector signal.

> a trigger signal is based on an electronic signal. The claim does not require its use [sic] of the electronic signal nor does it indicate that the electronic signal is a vertical synchronization signal. For clarification, the preamble to the [claim] further states that the electronic signal is indicative of a sync pulse in synchronization with image acquisition. And the body of the claim further states that the sync pulse is selected as one of two vertical synchronization signals. However, nowhere does [the] claim state that the electronic signal is identical to a sync pulse but only that it is indicative of one.

(*Id.* at 7-8.)

The arguments presented in the Appeal Brief (no Reply Brief was filed) do not persuade us that the Examiner erred in interpreting the recited "electronic signal indicative of a sync pulse" to be broad enough to read on Fischer's field-delayed detector signal, wherein the amount of the delay is equal to the time interval between successive field synchronization pulses. We understand Appellant to be arguing that the claim phrase "electronic signal indicative of a sync pulse" must be interpreted to mean that the "electronic signal" *is,* or is directly derived from, a sync pulse and more particularly from a vertical synchronization pulse. *See* Br. 7 ("Neither reference describes or suggests that a synchronization signal from a video camera be used as a trigger for generating a strobe light flash."). This argument is unpersuasive because it is not supported by an explanation of why Appellant's interpretation is the broadest reasonable interpretation of the claim language, bearing in mind that application claims are interpreted as broadly as is reasonable and consistent with the specification, *In re Thrift*, 298 F.3d 1357, 1364 (Fed. Cir. 2002), while "taking into account whatever

enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification," *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997), and without reading limitations from examples given in the specification into the claims, *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989).

For the foregoing reasons, we are affirming the rejection of claim 5. For the same reasons, we are affirming the rejection of independent claim 11, which like claim 5 calls for providing a triggering signal based on an electronic signal that is "indicative of" a sync pulse, and more particularly indicative of a vertical synchronization signal. We are also affirming the rejection of claim 10, which depends on claim 11 and is not separately argued. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

However, Appellant's above-discussed arguments are persuasive with respect to independent claim 16, which does not employ the "electronic signal indicative of a sync pulse" terminology found in claims 5 and 11. Instead, as pointed out by Appellant (Br. 8), in claim 16 "the links between the 'triggering signal' and the 'synchronization pulses' is [sic] all positively recited in the body of the claim." Claim 16 reads as follows:

> 16. An image acquisition system for use in viewing a moving item in a path in a mailing machine, said imaging system comprising:
>
> an imaging device, having a field of view covering at least a portion of the path, for acquiring an image of the moving item, the image including a discernible feature of the moving item;
>
> an illuminating source, positioned relative to the field-of-view of the imaging device, for providing a flash of light for

> illuminating at least a part of the moving item entering the field-of-view of the imaging device;
>
> a detection mechanism, positioned relative to the path, for providing an arrival signal indicating that the moving item entering the field-of-view has reached a predetermined point in the path;
>
> an electronic circuit, in response to [sic] the arrival signal, for *providing a triggering signal based on a synchronization pulse from the imaging device* to cause the illuminating source to provide the flash of light for illuminating said moving item while the image is acquired, wherein the flash of light has a flash duration sufficiently short as compared to the motion of the moving item so as to produce said discernible feature of the moving mail-related item in said image; and
>
> wherein the imaging device comprises a video camera providing two vertical synchronization pulses for each image frame, and the synchronization pulse is selected from one of said two vertical synchronization pulses.

Claims App. (Br. 12) (emphasis added).

We note that the Examiner has not explained how the more specific language of claim 16 can be read on Fischer as modified above. Instead, the Examiner merely refers (Final Action 4; Answer 6) to the explanation of the rejection of claim 5.

We are therefore reversing the rejection of claim 16.

DECISION

The rejection of claims 5, 10, 11 under 35 U.S.C. § 103(a) for obviousness over Fischer in view of Dewey is affirmed. The rejection on that ground of claim 16 is reversed.

The Examiner's decision that claims 5, 10, 11, and 16 are unpatentable over the applied references is accordingly affirmed-in-part.

AFFIRMED-IN-PART

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